

STN:Search History Report

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(FILE 'HOME' ENTERED AT 12:28:43 ON 12 AUG 2008)

FILE 'MEDLINE, SCISEARCH, CAPLUS, BIOSIS' ENTERED AT 12:29:32 ON 12 AUG 2008

L1 16212 S PSORALEN
L2 133 S BIOTIN? (L) L1
L3 82 DUP REM L2 (51 DUPLICATES REMOVED)
L4 61 S L3 AND PY<=2003
L5 47 S L4 AND (CHROMOSOME OR DNA OR SUPERCOIL? OR POLYTENE? OR PUFF
L6 47 FOCUS L5 1-
L7 14 S L6 AND CELL?
L8 27 S L3 AND (CELL? OR IN(1W)VIVO OR IN(1W)SITU)
L9 27 DUP REM L8 (0 DUPLICATES REMOVED)
L10 17 S L9 AND PY<=2003
L11 17 SORT L10 PY
E HIROSE SUS?/AU
L12 273 S E4
L13 2 S L12 AND L3

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L13 ANSWER 1 OF 2 MEDLINE on STN
TI Visualization of unconstrained negative supercoils of DNA on polytene chromosomes of Drosophila.
SO Journal of cell science, (2004 Aug 1) Vol. 117, No. Pt 17, pp. 3797-805. Electronic Publication: 2004-07-13. Journal code: 0052457. ISSN: 0021-9533.
AU Matsumoto Kuniharu; Hirose Susumu
AB Bulk DNA within the eukaryotic genome is torsionarily relaxed. However, unconstrained negative supercoils of DNA have been detected in few local domains of the genome through preferential binding of psoralen. To make a genome-wide survey for such domains, we introduced biotinylated psoralen into Drosophila salivary glands and visualized it on polytene chromosomes with fluorescent streptavidin. We observed bright psoralen signals on many transcriptionally active interbands and puffs. Upon heat shock, the signals appeared on heat-shock puffs. The signals were resistant to RNase treatment but disappeared or became faint by previous nicking of DNA or inhibition of transcription with alpha-amanitin. These data show that transcription-coupled, unconstrained negative supercoils of DNA exist in approximately 150 loci within the interphase genome.

L13 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2008 ACS on STN
TI Method for detecting negatively supercoiled DNA in eukaryotes crosslinked with biotinylated psoralen
SO U.S. Pat. Appl. Publ., 13 pp. CODEN: USXXCO
IN Hirose, Susumu; Matsumoto, Kuniharu
AB The invention relates to a method of detecting intracellular neg. supercoiled DNA conveniently and efficiently. Biotinylated psoralens, like psoralen, selectively intercalate between base pairs of neg. supercoiled DNA. A method for detecting neg. supercoiled DNA in cells, characterized by including the steps of

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incorporating biotinylated psoralen into cells, irradiating the cells with long-wavelength UV rays, causing the cells to react with avidin which has been labeled with a color-developing substance, a fluorescent substance, or a chemiluminescent substance, and measuring developed color, emitted fluorescence, or emitted chemiluminescence of the cells. The invention was applied to visualize neg. supercoiled DNA in *Drosophila melanogaster* salivary gland chromosome. Many psoralen signals were observed in the salivary gland chromosomes. Such signals were detected in many interbands or puffs in which transcription was activated, but not detected in every interband or puff. When nicks had been introduced into DNA before crosslinking, or transcription had been inhibited before crosslinking, psoralen signals were not detected. Thus, the present invention is the first to visualize neg. supercoiled DNA on interphase chromosomes.

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|----------------|------|----------|-----------------|----------|
| | ----- | ---- | ----- | ----- | ----- |
| PI | US 20040235007 | A1 | 20041125 | US 2003-699852 | 20031104 |
| | JP 2004344090 | A | 20041209 | JP 2003-146059 | 20030523 |
| | CA 2447762 | A1 | 20041123 | CA 2003-2447762 | 20031103 |

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